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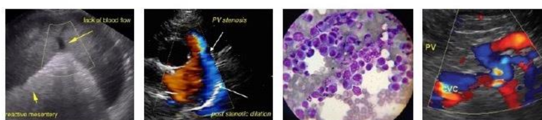

THE FOCAL ZONE
IMAGING PERFORMED BY
289-808-2608 info@thefocalzone.com

PATIENT
Phoebe Zack

SPECIES
Canine

BREED
Poodle

SEX
Female Spayed

AGE
11 years

WEIGHT
22lbs

INTERPRETED BY
Maggie Machen Lamy, DVM DACVIM (Cardiology)

IMAGING PERFORMED BY
Crystal Hill, RVT

HOSPITAL NAME
Beattie Pet Hospital
Ancaster

REFERRING VET
Dr. Williams

INVOICE
24531

DATE
6/2/22

PRESENTING CLINICAL SIGNS

History: Presented for collapse episode. Primarily in the evenings without association with activity or stress. Significant (5/6) heart murmur noted.
-Current medications: Vetmedin and Enalapril.

ELECTROCARDIOGRAPHIC FINDINGS *Note: Single lead ECGs are evaluated as a rhythm strip. Morphology/MEA cannot be definitively commented on.

A single lead ECG is available; 25mm/s, 20mm/mV. The average heart rate is 120bpm (range 60-150bpm). P waves are not definitively identified throughout; however, a sinus origin is suspected. P for every QRS complex and vice versa. The P and QRS morphologies are positive. A single APC is suspected; artifact is not ruled out. No VPCs, pauses or other dysrhythmias observed.
ECG diagnosis: Respiratory sinus arrythmia with a possible single APC.

ECHOCARDIOGRAM FINDINGS

2D, m-mode, color flow and doppler imaging is available. Mild thickening of mitral valve leaflets with no prolapse into the left atrial lumen. Mild eccentric mitral regurgitation with mild left atrial dilation. Normal MR velocity. Mild LV dilation with adequate myocardial function. The tricuspid valve appears mildly thickened with trace tricuspid regurgitation. Velocity consistent with early pulmonary hypertension. Right heart appears normal. The pulmonic and aortic valves are normal in morphology and mobility. Normal pulmonic and aortic outflow velocities with laminar flow. No obvious aortic or pulmonic insufficiency. No pericardial or pleural effusion noted. No obvious cardiac masses.

CARDIAC CHART

CANINE CARDIAC PARAMETERS	MR VMAX (m/s)	TR VMAX (m/s)	LA/AO (Boon method)	LA/AO (Heart Base; Swe)	FS (%)	EF (%)	EPSS (cm)
NORMAL PARAMETER	4.5-5.5	<2.7	1.3	<1.6	28-40	40-100	<0.6
PATIENT	5.7	3.1	NM	1.5	52	94	0.3
CANINE CARDIAC PARAMETERS	**HR** (BPM)	**AV VMAX** (m/s)	**PV MAX** (m/s)	**BODY WEIGHT** (kg)	**LA** 2D short axis Base view (cm)	**LVIDd** Avg; 2D and m-mode short axis (cm)	**LVIDs** Avg; 2D and m-mode short axis (cm)
NORMAL PARAMETER	50-100	0.7-1.7	0.7-1.6	BELOW	BELOW	BELOW	BELOW
PATIENT	88	1.9	1.5	10.0	2.3	3.3	1.6
*Normal chamber parameters expressed as a mean value (SD)				3	1.27 (5.3)	2.46 (2.46)	1.36 (5.5)
BODY WEIGHT DEPENDENT PARAMETERS				5	1.40 (4.5)	2.74 (5.2)	1.60 (4.7)
**Note: All measurements based upon multi-modal images and methods. An average value is reported.*				10	1.50 (3.8)	3.27 (3.5)	2.06 (3.1)
				15	1.83 (2.0)	3.71 (2.4)	2.43 (2.1)
				20	2.02 (1.9)	4.14 (2.2)	2.80 (2.0)
Adapted from June Boon, Veterinary Echocardiography, 1998				25	2.18 (2.4)	4.48 (2.9)	3.10 (2.5)
Rishniw M and Hollis NE, J Vet Intern Med 2000; 14:429-435				30	2.33 (3.3)	4.83 (3.9)	3.39 (3.4)
Hansson et al, Vet Rad and Ultrasound 2002				35	2.48 (4.3)	5.17 (5.0)	3.69 (4.5)
Bonagura et al. Echocardiography: principles of interpretation, Vet Clin North Am 15:1177, 1995				40	2.62 (5.2)	5.48 (6.1)	3.96 (5.4)
				50	2.88 (7.1)	6.07 (8.3)	4.46 (7.4)

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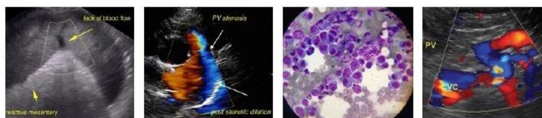

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INTERPRETATION OF THE FINDINGS & FURTHER RECOMMENDATIONS

Chronic degenerative valve disease causing mild mitral and trace tricuspid regurgitation. Lack of significant left atrial enlargement indicates the current risk for complication is low. Early pulmonary hypertension is noted which is of unknown significance in a dog without respiratory signs. No additional issues are noted in this study.

The ECG is most consistent with a profound respiratory sinus arrythmia. The resting heart rate is quite slow, which **does not support acute cardiac decompensation**. A single APC is possible, although largely insignificant and does not warrant therapy.

These findings would suggest structural disease is not the cause of the collapse episodes. While syncope can certainly be a sign of pulmonary hypertension, only mild changes are seen here and this type of syncope is exertional in nature due to hypoxia. Other possibilities should be considered including an intermittent arrythmia, blood pressure swings such as due to an adrenal tumor, vaso-vagal event, etc. Full systemic evaluation is advised. The resting heart rate is slow in this patient, which is suspected to reflect high vagal tone. Causes of high vagal tone should be considered in this case.

In a dog without significant left atrial enlargement, no cardiac medications are clearly indicated. That being said, given the unusual presentation reasonable to continue Pimobendan for the time being. Enalapril is unnecessary and can be discontinued. Assessment of progression in the future will help predict long term prognosis, which is highly variable at this stage (B1). Omega fatty acid supplementation and mild salt restriction may be of some long-term benefit. Monitor for development of a cough, labored breathing, exercise intolerance or collapse episodes.

Anesthetic risk is considered mild if needed. Cardiac protective drug choices (opioid/benzodiazepine premedication, propofol or alfaxalone induction, isoflurane gas) are recommended. Pre-oxygenate for 5-10 minutes prior to induction. Monitor for arrhythmias, hypotension, and hypoxia both intra and post-operatively and intervene as necessary. Mild IV fluid restriction is recommended to avoid fluid overload. Avoid heart rate stimulating drugs such as atropine unless clinically indicated.

PLAN

Full systemic evaluation is advised, including a blood pressure. Consider HR/stress response, atropine challenge, holter, etc if cause of episodes remains undiagnosed. Continue Pimobendan 0.3mg/kg PO q12h. Discontinue Enalapril as discussed.

Recommend conservative monitoring with a recheck echocardiogram in 6 months, sooner if any development of clinical signs.

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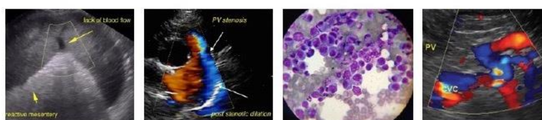

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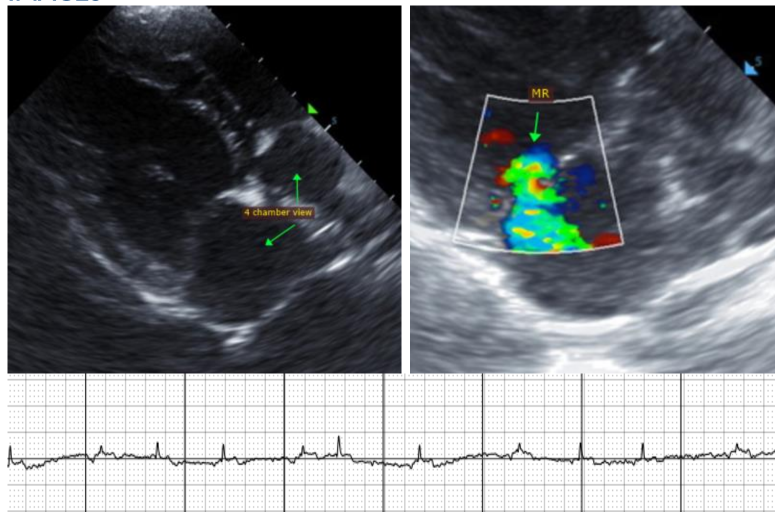
IMAGES



The information and recommendations provided are based on the images presented by the referring veterinarian. No evaluation can be communicated regarding pathology that was not visible in the image/video clips provided.

Thank you for this referral. This report was generated using transcription software, and minor dictation errors may be present. If the clinical or image interpretation does not parallel your findings or if I can be of any further assistance, please contact me.

Maggie Machen Lamy, DVM
Diplomate of the American College of Veterinary Internal Medicine (Cardiology)
info@sonopath.com